IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Abhay S. Kant et al.	§	Group Art Unit: 2863
Serial No.: 10/720,817	§	Examiner: Lau, Tung S.
Filed: November 24, 2003	§	
For: METHOD AND APPARATUS FOR DETECTING RUB IN A TURBOMACHINE	§	Atty. Docket: 133918-1/SWA GERD:0332

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF TRANSMISSION OR MAILING
37 C.F.R. 1.8

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below:

11-8-2006
Date

Tait R. Swanson

Sir:

DECLARATION OF MARK M. DIMOND UNDER 37 C.F.R. § 1.131

I, Mark M. Dimond, hereby declare as follows:

1. I am a co-inventor of record of the above-referenced application.

2. My residence address is set forth below, along with my signature.

3. We conceived the subject matter disclosed and claimed in the above-referenced application in the United States, a NAFTA country, or a WTO country at least prior to September 30, 2002. This conception is evidenced by slides 1, 2, 5, 9, and 14 of a PowerPoint presentation relating to "Modified Algorithms based on feed back received from review meeting on July 19, 2002," as indicated by slide 1. *See* Exhibit A. These slides generally illustrate and describe systems and methods for monitoring operational parameters of a turbomachine (e.g., a turbine generator) on-site via various sensors, identifying anomalies in data received from sensors, and detecting possible rub events. Slide 2 is labeled "High Differential Expansion along with High Vibration," and illustrates and describes monitoring bearing vibration, checking for abnormal amplitude or variation, and triggering an alarm if an anomaly is observed with the bearing vibration.

Slide 5 is labeled "High eccentricity following vibration excursion," and illustrates and describes monitoring or checking for abnormalities associated with vibration or eccentricity, and identifying a possible rub during shut down of a turbine generator (indicated by "TG" in the slide). Slide 9 is labeled "Sudden large shell temperature ramp," and illustrates and describes monitoring parameters, identifying an abnormal change in steam and shell metal temperature, identifying an abnormal change in vibration, and identifying a possible rub event in the turbine generator (i.e., steam turbine generator). Slide 14 is labeled "Rub Anomaly Flow Down," and illustrates and describes various techniques for monitoring and identifying abnormalities to identify a possible rub event. The PowerPoint presentation was prepared at least prior to September 30, 2002. A true and redacted copy of this PowerPoint presentation is attached hereto as Exhibit A.

4. We actually reduced to practice the subject matter disclosed and claimed in the above-referenced application in the United States, a NAFTA country, or a WTO country at least prior to September 30, 2002. This actual reduction to practice is also evidenced by the Excel graph labeled "Desk Top validation results (9/17/02)," which records successful completion and testing of a prototype of the method and system set forth and claimed in the referenced application at least prior to September 30, 2002. *See* Exhibit B. Specifically, the Excel graph represents data collected while monitoring the operation of a turbomachine, and indicates anomalies that correspond to possible rub events in the turbomachine. The Excel graph illustrates variation in speed relative to time and four different alarms indicative of a possible rub event. The Excel graph was prepared at least prior to September 30, 2002. A true and redacted copy of this Excel graph is attached hereto as Exhibit B.

5. This actual reduction to practice is further evidenced by the PowerPoint presentation relating to "Steam Turbine Remote Monitoring & Diagnostics Rub Detection CDE Application Design Review," which is dated December 18, 2002, and includes various data, graphs, diagrams, and information relating to conception and reduction to practice prior to September 30, 2002. *See* Exhibit C. Slide 3 is labeled "ST Rub CDE Design Review," and indicates that the Continuous Data Engine (CDE) is a real-time anomaly detection platform that resides on the On-Site Monitor (OSM) for Steam Turbines (ST). Slide 19 is labeled "Validation results for DT and OSM testing with real field data," and tabulates testing of a steam turbine remote monitoring and diagnostic

system on 7/9/2002, 6/26/2002, 6/13/2002, 5/8/2002, 7/13/2002, 6/8/2002, 6/24/2002, 5/31/2002, 11/9/2002, 9/17/2002, and 5/21/2002. Slide 20 is labeled "OSM Validation Results of CDE algorithms with 'Real Rub Event' Data Overview," and illustrates successful testing of the remote monitoring & diagnostic system to identify rub events in a steam turbine on 5/21/2002, 6/24/2002, and 7/9/2002. Slide 21 is labeled "OSM Validation of CDE algorithms with 'Real Rub Event' Data," and illustrates further successful testing of the remote monitoring & diagnostic system to identify rub events in a steam turbine on 6/8/2002 and 6/24/2002. Slide 39 is labeled "On-Site Data Flow," and illustrates an On-Site Monitor (OSM) Data Flow Diagram related to a design review on November 13, 2000. The diagram of slide 39 illustrates a web interface and a mail service for monitoring a turbine generator. Slide 69 is labeled "DT Validation of CDE with ... unit data, 270T489," and illustrates further successful testing of the remote monitoring & diagnostic system to identify rub events in a steam turbine on 5/31/2002 and 9/17/2002. A true and redacted copy of this PowerPoint presentation is attached hereto as Exhibit C.

6. I declare further that all statements made herein are of my own knowledge, are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Dated: 07 Nov 06 By: 

Mark M. Dimond

Declarant's Full Name: Mark M. Dimond

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